



Housing Health and Safety Rating System (HHSRS)

Case Studies

Group
Protection Against
Accidents A

Hazard A4
Fire and Explosions

Example A4.8
Post-1979 Flat

Vulnerable Group
All persons aged
60 years and over

Multiple Locations
Yes

Related Hazard A7
Structural Collapse and
Falling Elements

Related Hazard A8
Electrical Hazards

Related Hazard D18
Crowding and
Space



Dwelling

Description

The dwelling is a 3-bedroomed flat in a 6-storey mid-rise, purpose-built block of flats (between 11 and 18 m high), built in the early 2000s. It is one of 18 flats in the block, and the flat being assessed is located on the first floor. Access is via an external staircase and external walkway leading to the flat's entrance. There is adequate artificial lighting to the external walkway and stairs. A lower-ground car park is available for residents of the block, which means the flat is somewhere between one and two storeys high, with a drop of over 4.5 m from the balcony.

Communal heating and a common ventilation system have been provided to the block. Hot water is provided via a tank in a cupboard within the kitchen area. No gas is supplied to the flat.

The entrance door to the flat gives access to an open-plan kitchen/living area, with all three bedrooms being situated off this space. Each bedroom has its own ensuite. The living space has sliding doors that lead on to a balcony. Two of the three bedrooms have Juliet balconies.

There is a grade LD2 alarm system with a heat detector in the kitchen area and a smoke detector in the living area.

The flat's entrance door is a FD30 with smoke seals, intumescent strips and an overhead closer. The bedroom doors are FD20 rated without strips, seals or closers.

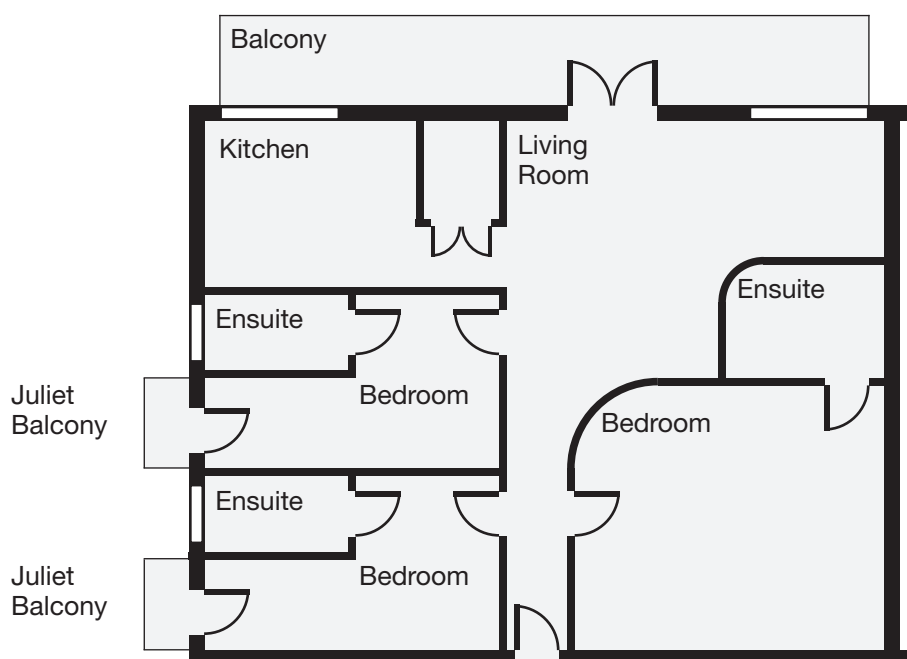
The flat is occupied by four persons in three households and is therefore a flat in multiple occupation (FMO). It is rented on a single assured shorthold tenancy, with all the tenants named on the one tenancy. It appears that although the FMO is described by the landlord as a 'shared type', the landlord has control over replacing tenants without existing tenants having any say in the matter. In addition, the landlord includes bills in the monthly rent and there are locks on the bedroom doors.

There is a communal bin store located in an enclosure external to the building at an appropriate distance.

The electric meters are in a separate plant room contained in the sub-ground car park.

The property has a valid EPC with a B rating.

There is a satisfactory electrical installation condition report for the flat.



1
Floorplan

Deficiencies

Description

All three bedrooms are inner rooms. There is no means of escape from these rooms via window or balcony door due to the drop being in excess of 4.5 m. The only means of escape is via the kitchen/living area.

Each of the bedrooms has had a key-operated lock added to the doors, which both compromises their fire resistance and means that occupants have to use a key to open the door.

The bedroom doors are FD20 (as opposed to the required FD30) and lack strips, seals and overhead closers.

There are no fire suppression systems in the flat, nor are there any fire blankets or extinguishers.

Candle use and smoking in the bedrooms is evident, as is smoking and barbecue activity on the communal balcony.

Appliances appear not to have been PAT tested, and the

soft furnishings, mattresses and sofas are not fire-safety labelled.

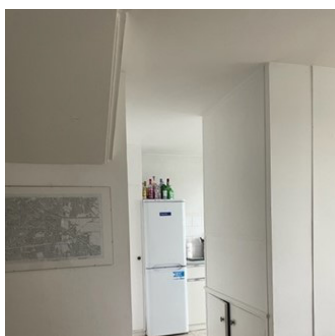
The consumer unit for the flat is located in the cupboard containing the hot water tank; this cupboard is not fire resistant.

A recent Type 1 fire risk assessment for the flat was carried out, but this cannot be relied on as it did not identify any issues and indicated no further action was necessary.

Note: This assessment is of the flat, not the common parts.



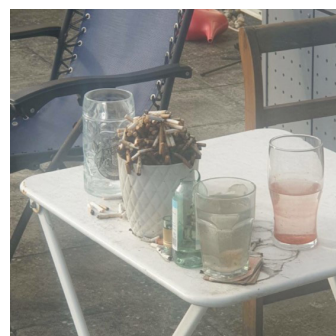
1
Barbecue on balcony



2
Open plan kitchen and living area – showing unprotected cupboard



3
FD20 door example



4
Evidence of smoking on balcony

Relevant Baseline Indicators

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective

Subject	Score	BI	Baseline Indicators
8 Internal Doors	0 1 2 3	8.1	Internal doors leading between areas of a single dwelling must provide a sufficient barrier to the spread of smoke and fire (where appropriate), any glazing in doors must respond safely to collision, and must be designed for functionality to avoid strains or entrapment when in use, and must be maintained in good repair. All bathrooms and WC doors must be fitted with a suitable lock and must not contain clear glass.
11 Security	0 1 2 3	11.2	Access doors to dwellings should have adequate locks. Doors must be solid external grade and fitted with a minimum of a mortice deadlock to BS-3621, openable from the inside without a key. There must be a means for occupiers to view visitors without opening the door, either by means of a viewer within the door or by a glazed pane adjacent or close to the entrance door. All rear doors should be fitted with a mortice dead lock to BS-3621 or 2 security bolts.
19 Fire Safety	0 1 2 3	19.1	Any furniture or soft furnishings that are provided by the landlord should comply with the Furniture and Furnishings (Fire) (Safety) Regulations 1988, inclusive of being correctly labelled for fire resistance.
	0 1 2 3	19.2	All electrical equipment supplied by landlords in rented residential premises is safe and compliant with current UK requirements for safety of domestic electrical products; all electrical appliances supplied by the landlord are subject to testing in line with the IET Code of Practice for In-service Inspection and Testing of Electrical Equipment (Fifth Edition) (unless they are under one year old and display a UKCA/CE marking).
	0 1 2 3	19.4	The electrical installation should have been inspected and tested within the last 5 years.
	0 1 2 3	19.5	There should be sufficient, properly designed and appropriately sited smoke and heat detectors with alarms in every dwelling. These should be properly maintained and regularly tested.
	0 1 2 3	19.6	The escape route from bedrooms through habitable rooms should either be avoided, or mitigated, by other provisions.

Relevant Baseline Indicators

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective

Subject	Score				BI	Baseline Indicators
	0	1	2	3	19.7	Egress through doors/windows that are required for means of escape should not require the use of a key or a code.

Other Relevant Matters

Considerations of Likely Fire Scenarios

The assessor is to consider the likelihood of a fire igniting within the scenario presented and the likelihood of whether that fire can become uncontrolled. The outcomes relate to the impact of the fire to persons, which is to include the effects of smoke inhalation.

The assessor is to consider the likelihood of an explosion occurring and its source and whether that explosion is also likely to lead to a fire ignition and the outcomes are impacted by the location of the explosion and the provisions within the building to contain the explosion.

Please see Part 3 of the Operating Guidance [title] for explanations of the relevant matters.

Matters affecting Likelihood of Harm

0	1	2	3	Electrical sources of ignition
0	1	2	3	Smoking management
0	1	2	3	Potential for arson
0	1	2	3	Accidental fire spread
0	1	2	3	Cooking provision
0	1	2	3	Fixed heating
0	1	2	3	Lightning
0	1	2	3	Laundry facilities
0	1	2	3	Multiple occupation and overcrowding

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective**Matters affecting both Likelihood and Harm Outcomes**

0	1	2	3	Escape route
0	1	2	3	Dwelling layout
0	1	2	3	Travel distance
0	1	2	3	Operation of exits
0	1	2	3	Obstructions
0	1	2	3	Non-fire resisting fabric – allowing fire to spread.
0	1	2	3	Smoke permeable fabric – allowing smoke to spread.
0	1	2	3	Fire stops to cavities – lack of, allowing fire to spread.
0	1	2	3	Disrepair to fabric – walls, ceilings and/or floors may allow smoke, fumes and/or fire to spread.
0	1	2	3	Internal doors – insufficient doors or doors of inappropriate materials or ill-fitting doors.
0	1	2	3	Fire-resisting construction (including any glazing) protecting escape routes
0	1	2	3	Measures to ensure that fire-resisting doors are maintained in the closed position
0	1	2	3	Smoke Control
0	1	2	3	Artificial lighting
0	1	2	3	Levels of compartmentation
0	1	2	3	Provision of appropriate Fire Safety Signs
0	1	2	3	Fire Detection and Alarm Systems

0	1	2	3	Provision of fire-fighting equipment
0	1	2	3	Fire suppression system

Matters related to cladding

0	1	2	3	Condition of cladding
0	1	2	3	Combustibility and fire performance of external wall construction and cladding
0	1	2	3	Location and adequacy of cavity barriers
0	1	2	3	Presence/maintenance of dry/wet rising mains
0	1	2	3	Presence/maintenance of Firemen's/ Firefighting/Firefighters lifts
0	1	2	3	Access arrangements to the site and the building for the fire and rescue service
0	1	2	3	Balconies

Matters related to explosions

0	1	2	3	Unauthorised gas supply
0	1	2	3	Siting of gas tanks
0	1	2	3	Ventilation
0	1	2	3	Hot water storage tank
0	1	2	3	Vented hot water system
0	1	2	3	Unvented hot water system

Likelihood of Harm

Scale Points Likelihood of harm from this hazard over the next twelve months	
Very Likely	1 in 1
	1 in 2
	1 in 3
	1 in 5
Likely	1 in 10
	1 in 20
	1 in 30
	1 in 50
Unlikely	1 in 100
	Example Dwelling 1 in 200
	1 in 300
	1 in 500
Very Unlikely	1 in 1,000
	1 in 2,000
	National Average 1 in 3,000
	1 in 5,000
Score 1 in 200	

Justification of Scoring
Likelihood of Harm

There is an increased risk of fire from cooking due to there being no fire blanket. If a fire were to occur in the open-plan kitchen/living area, the tenants could become trapped if in their bedrooms at the time. The FD20 doors provide limited fire separation, leaving the tenants more likely to suffer burns or smoke inhalation whilst awaiting the fire and rescue service. A bedroom fire could also remain undetected until the outer room becomes smoke-logged, reducing the chances of escape. Lack of smoke detection in the bedrooms delays early warning in the event of a fire. Key-operated locks on the individual bedroom doors may also hinder escape. Occupancy by four people comprising three households increases the likelihood they will be cooking independently and at different times, with more intensive use of kitchen facilities and some cooking possibly coinciding with times when other occupants are sleeping in the inner rooms.

The recent Type 1 fire risk assessment gives false reassurance, when in fact there are serious safety concerns in the event of a fire occurring.

Harm Outcomes

Extreme		Severe		Serious		Moderate	
Death, permanent paralysis, etc.		Heart attack, serious fractures, etc.		Chronic stress, severe concussion, etc.		Broken fingers, moderate cuts, etc.	
Very Likely	50.0	Very Likely	50.0	Very Likely	50.0	Example Dwelling	50.0
	30.0		30.0		30.0		National Average
Example Dwelling +	20.0	Example Dwelling	20.0	Example Dwelling	20.0	These scores are simply calculated as the sum of the other three harm outcomes subtracted from 100%	90.0
	10.0		10.0		10.0		
Likely	10.0	Likely	10.0	Example Dwelling	10.0		
	5.0		5.0		5.0		
National Average	2.0	National Average	2.0		2.0		
	1.0		1.0	Unlikely	1.0		
Unlikely	0.5	Unlikely	0.5		0.5		
	0.2		0.2	Very Unlikely	0.2		
Very Unlikely	0.1	Very Unlikely	0.1		0.1		
	0.0		0.0	National Average	0.0		
Score		Score		Score		Score	
20.0%		20.0%		10.0%		50.0%	

Justification of Scoring

Harm Outcomes

Whilst the travel distance from bedrooms is short, the only escape route is via the kitchen/living areas, where a fire is most likely to occur. Locks on bedroom doors increase the risk of occupants becoming trapped if the flat becomes smoke-logged and FD20 doors provide limited fire separation.

The lack of labelling to mattresses and other soft furnishings provided by the landlord raises the question of whether they would emit toxic fumes in the event of

a fire. There is an increased risk of injury due to burns, smoke inhalation and fractured bones if occupants are forced to jump from the windows to escape.

Safety Ratings

Scenario 1
As described in this document

Key

Category	Band	Score
1 Legal duty to take action	High	10,000
2 Discretion to take action	Medium	1,000
	Low	100

Likelihood of Harm 1 in 200			
Extreme 20.0%	Severe 20.0%	Serious 10.0%	Moderate 50.0%
Category	Band	Score	
1 Legal duty to take action	High	10,000	
2 Discretion to take action	Example Dwelling	1,118	
	Medium	1,000	
	Low	100	
National Average		17	
Score			
1,118			

Scenario 2

After works meeting baseline indicators

Likelihood of Harm
1 in 1,000

Extreme	Severe	Serious	Moderate
5.0%	0.0%	5.0%	90.0%

Category	Band	Score
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1 Legal duty to take action	High	10,000
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2 Discretion to take action	Medium	1,000
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	Low	100
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Example Dwelling		52
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National Average		17
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Score

52**Scenario 3**

After further improvements

Likelihood of Harm
1 in 3,000

Extreme	Severe	Serious	Moderate
5.0%	0.0%	5.0%	90.0%

Category	Band	Score
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1 Legal duty to take action	High	10,000
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2 Discretion to take action	Medium	1,000
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	Low	100
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Example Dwelling + National Average		17
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Score

17**Justification of Scoring**

After works meeting baseline indicators

Works to comply with the BIs will achieve several improvements. Compliance with BI 19.7 will see the removal of the key-operated locks from the bedroom doors. Compliance with BI 19.1 will ensure that furniture and soft furnishings are verified as fire safe or replaced, and compliance with BI 19.2 will ensure electrical appliances provided by the landlord are PAT tested, and repaired or replaced if necessary.

To comply with BI 19.6, the layout of the flat should be reconfigured if possible so that it would not be necessary to go through the kitchen/living area to exit the flat in the event of a fire. If an alternative layout is not possible, risk will need to be mitigated by upgrading the fire alarm system to a Grade D1 LD1 system, with smoke detectors in all bedrooms. Improvements to the flat layout and the removal of key operated locks along with the removal of unsafe furnishings will attain a significant improvement in the likelihood of an occurrence and see the harm outcomes return to the national average.

Justification of Scoring

After further improvements

A thorough FRA would identify further issues such as the need to equip the kitchen with a fire blanket, and that the doors should be upgraded from FD20 to FD30 fire resistance. A water sprinkler or misting system should be installed in the open-plan kitchen/living area, with a proper maintenance contract in place.

If the landlord were to decide to change occupancy to a single family, this would reduce the inherent fire risk and a more limited schedule of works could be discussed.

Occupants should be advised not to smoke or use candles in the flat, and clauses to this effect should be included in the tenancy agreement.

Other Relevant Legislation and Guidance

Updates

Matters for consideration listed in this section were correct at the time of publication. For the most up-to-date legislation and guidance in these areas, please visit the [gov.uk](https://www.gov.uk) website.